



Continuous biomanufacturing reduces environmental impact

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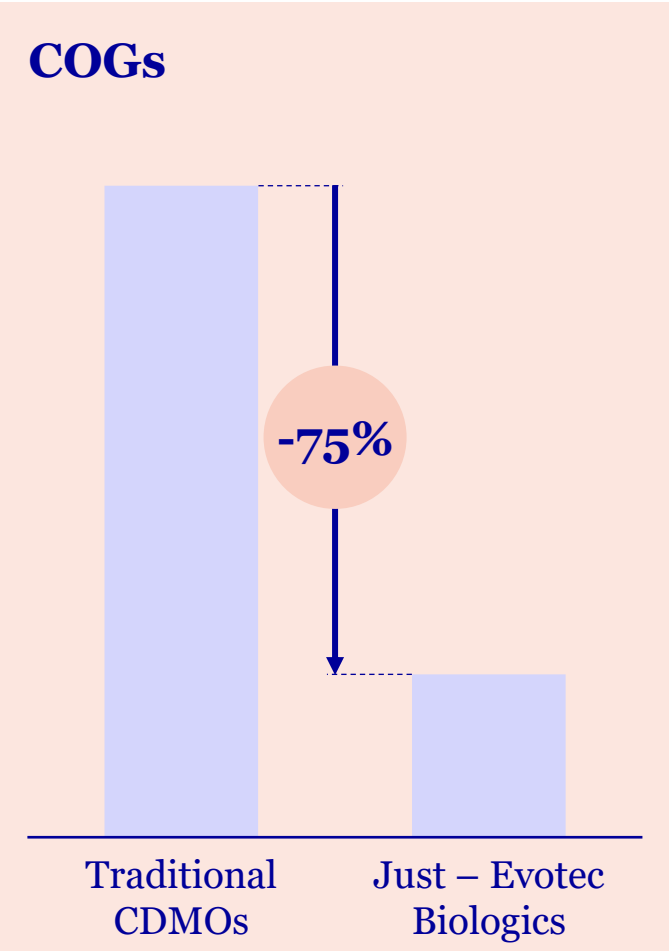
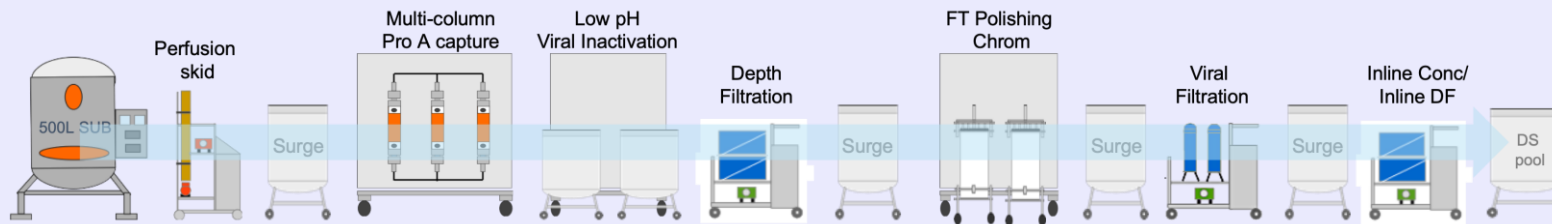


Highly intensified processing maximizes efficiency

Reduces COGs but increases sustainability

Fully end-to-end continuous process for late-stage products >25-day production

- COGS from 200 to 50 \$/g
- Shorter switch between products

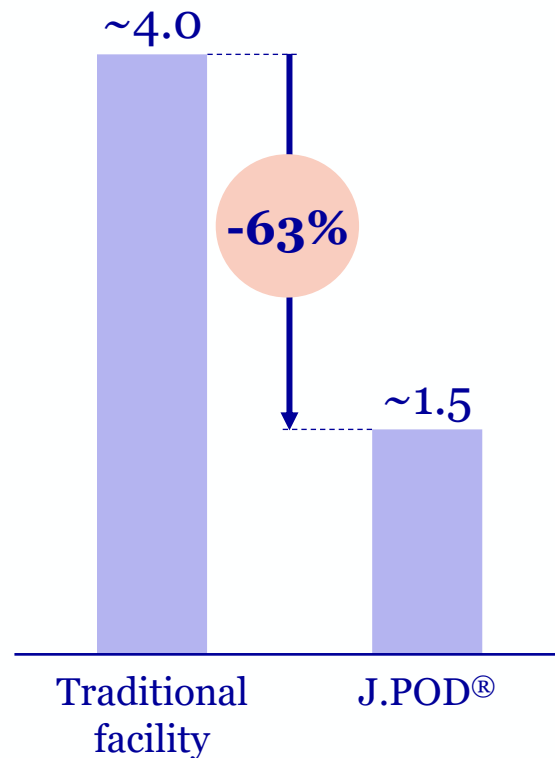


Continuous biomanufacturing is a flexible and agile approach

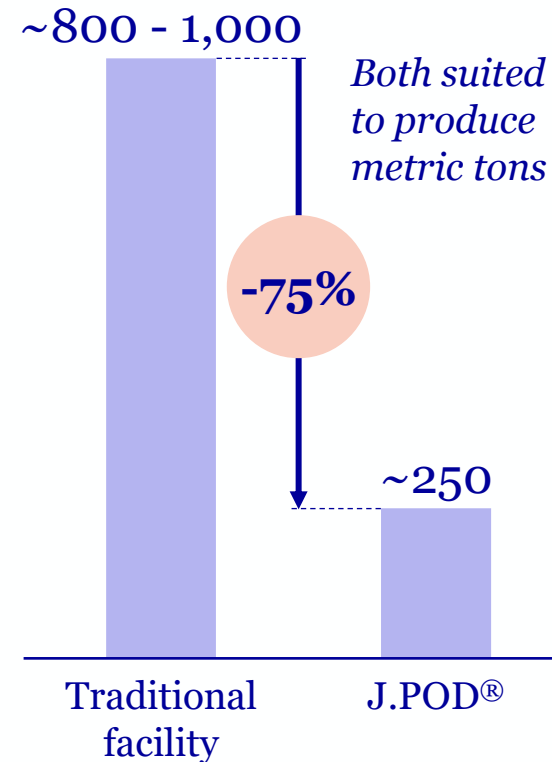
J.POD® – The physical expression of agility

- Reduced cost and time to set up facility
- More environmentally friendly versus traditional facilities due to avoidance of unnecessary steps
- Smaller footprint

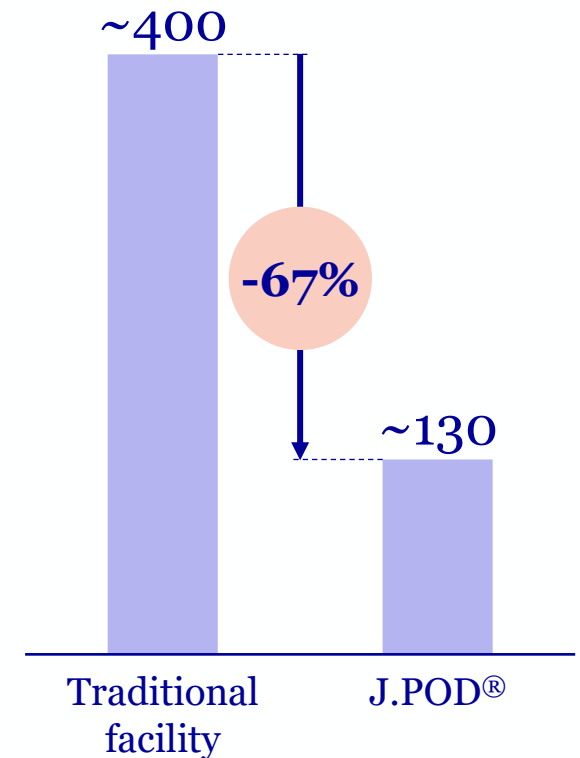
Time to set up a J.POD® is short, Years



Cost of a J.POD® facility, US\$ m



Smaller Footprint Square feet x 1,000





CM facilities are environmentally friendly

J.POD Toulouse's incorporated key LEED¹ principles



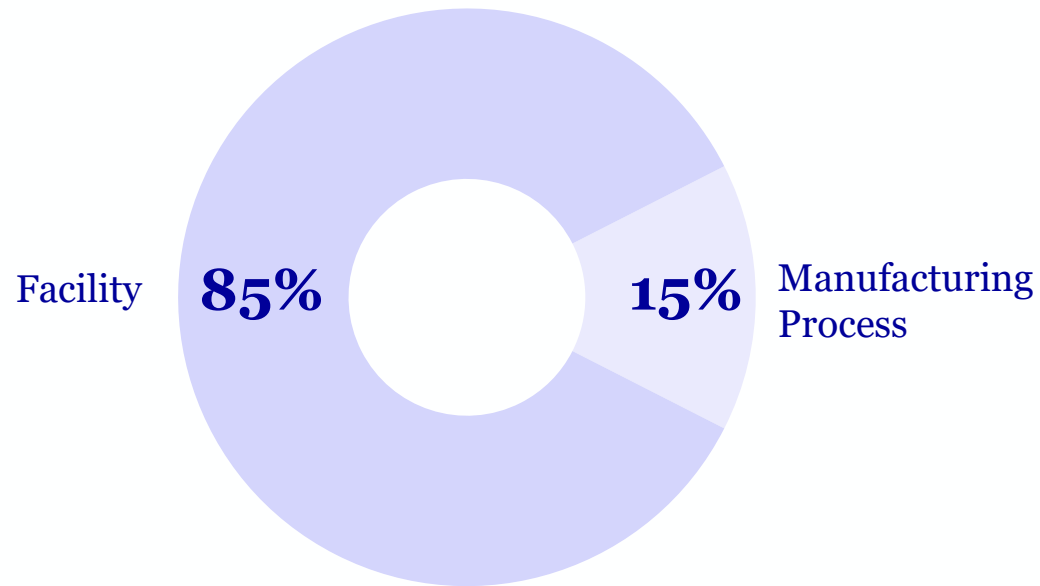
Submitting J.POD Toulouse
for LEED Silver certification

Key LEED elements

- Water usage reduced
 - No clean/steam in place = 50% less process water needed
 - Low flow fixtures for showers/restrooms; Aquasense faucets
- Sustainable building materials
 - Low-carbon concrete
 - Insulated aluminum panels
- Electrification/renewable energy
 - District heat
 - Solar panels on roof and parking lot
 - EV chargers

Plant design determines efficient energy use

Energy consumption of biologics manufacturing



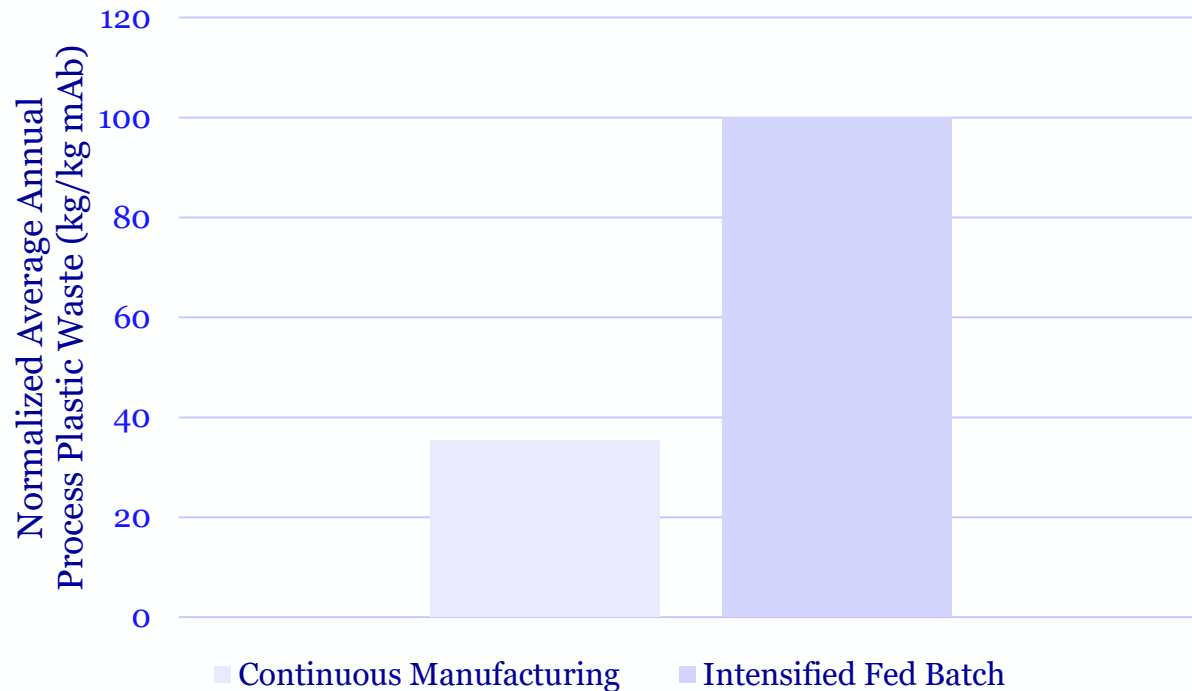
- Reduced facility footprint
 - Single Use systems eliminate clean/steam utilities & piping
 - Small cleanroom PODs reduce HVAC (Heating, Ventilation, Air Conditioning) energy demand
- Energy efficiency improved
 - WFI generated by electricity (membrane technology) rather than steam
 - Heat recovery boost energy efficiency by 90%
 - LED lighting and occupancy sensors
 - Right-sized air changes/hour in labs
- Right Energy mix
 - Washington leads electricity from hydropower¹
 - J.POD TLS uses renewable energy heating network Toulouse Energie Durable (“TED”)



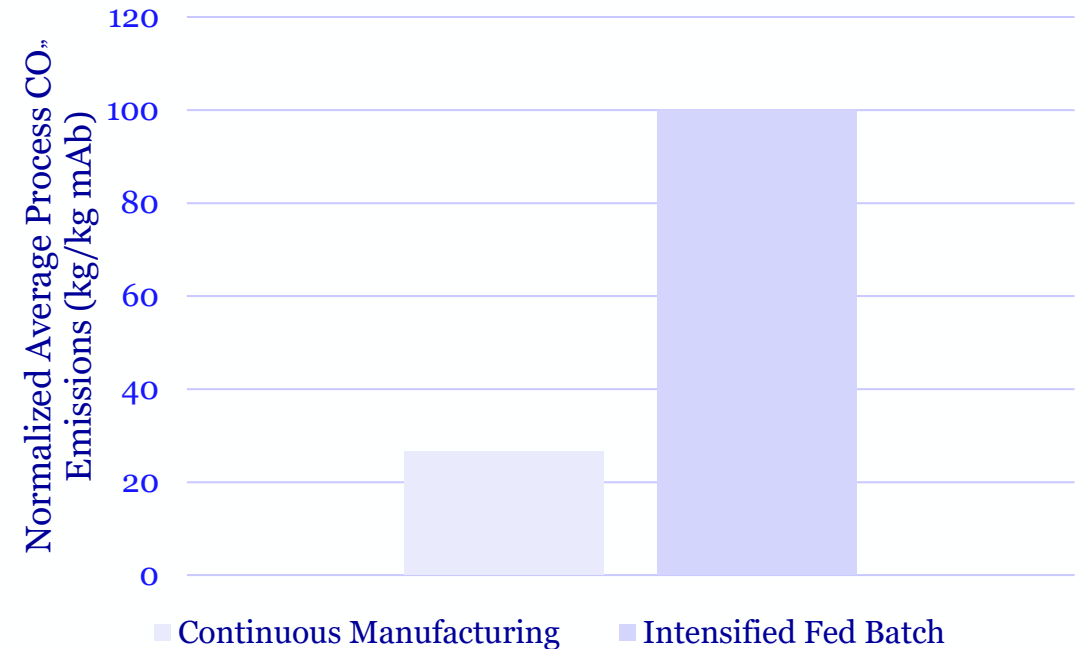
CM facilities are a sustainable biomanufacturing solution

Process intensification allows more product to be manufactured with less waste

Continuous manufacturing reduces process plastic waste by 65% compared to intensified fed-batch



Continuous manufacturing reduces CO₂ emissions by 73% compared to intensified fed-batch





Together in collaboration for a better future

Just-Evotec Biologics memberships

NIIMBL

Members

- Industry
- Academia
- States
- NIST
- FDA
- MEPs
- MIIs
- NGOs
- NIH
- DOD
- BARDA
- Trade org.

Focus areas

Existing products

mAbs, proteins, vaccines
ADCs, bispecifics, virus-like particles

Emerging products

gene and cell therapies

Manufacturing process themes



Impact

National

Growth of globally-competitive domestic industry

Regional economic development

Secure, integrated supply chain

Access to new and improved medicines

Industry

Flexible, adaptive manufacturing

De-risked manufacturing innovation

Lower costs

Accelerated development and approval

- The program provides scientists and the teams that support laboratories with actionable ways to make meaningful change. To date, My Green Lab has supported over 1500 labs in a range of sectors.
- My Green Lab Certification saves money and preserves resources while ensuring a safe, healthy, and fun environment



450 cu/ft plastic and 30 cu/ft of styrofoam /year